

What Is Claimed Is:

1. A method for detecting the occupancy state of a seat, especially in a vehicle, and for use in activating means of restraint allocated to the seat, as a function of the occupancy state, in which, with the aid of an image recording system, a 3D image of the seat is recorded and evaluated with respect to the occupancy state, and possibly also with respect to the type of the occupancy, wherein a 3D pattern of the seat is used for the evaluation.
2. The method as recited in Claim 1, wherein the 3D pattern of the seat is subdivided into partial regions of the seat, such as the seat surface, the backrest, the headrest or sections thereof, and the evaluation is done by partial region or section.
3. The method as recited in Claim 2, wherein, in addition, the mutual relationship of the partial regions with one another, or of the sections with one another is drawn upon for the evaluation.
4. The method as recited in one of Claims 1 through 3, wherein the 3D pattern of the seat is an approximation to the real shape of the seat, such as a wire screen model.
5. The method as recited in one of Claims 1 through 4, wherein the 3D pattern of the seat is derived from the construction documents of the seat.
6. The method as recited in one of Claims 1 through 4, wherein the 3D pattern of the seat is derived in an initialization step from a 3D image of the unoccupied seat under specified surrounding conditions.

7. The method as recited in one of Claims 1 through 6, wherein, in response to deviations between the 3D image and the 3D pattern that exceed a minimum value (threshold 27), it is concluded that a seat is occupied.

8. The method as recited in one of Claims 1 through 7, wherein, from the presence and non-presence of deviations exceeding a minimum value in at least certain selected partial regions or sections, a conclusion is drawn on the type of object occupying the seat.

9. The method as recited in Claim 8, wherein, in addition, a conclusion is drawn on certain seat parameters of the object.

10. The method as recited in one of Claims 1 through 9, wherein the occupancy state is regarded as being recorded only if the essentially identical evaluation result has been ascertained several times subsequent in time to one another.

11. The method as recited in Claim 10, wherein a temporal filtering is carried out, such as ascertaining a moving average or a median value of the deviation.

12. The method as recited in one of Claims 1 through 11, wherein, for the evaluation, the measured data corresponding to the 3D image and/or the data corresponding to the 3D pattern are transformed for adaptation to each other.

13. A device for recording the occupancy state of a seat (1, 23) especially in a vehicle (5) and for use in the activation (10), of the means of restraint (8) allocated to the seat (1, 23), as a function of the occupancy state, having an image recording system (16, 24, 25) for recording a 3D image of the seat (1) and having an evaluation circuit for evaluating the 3D image with respect to the occupancy state of

the seat, possibly also the type of the occupancy of the seat, especially for carrying out the method as recited in one of Claims 1 through 12,

wherein the evaluation circuit (13) compares a 3D pattern of the seat (1, 23) to a 3D image of this seat (1, 23) for the evaluation.

14. The device as recited in Claim 13, wherein the evaluation circuit (13) carries out separately the evaluation additionally with respect to partial regions of the seat, such as the seat surface (2), the backrest (3), the headrest (4) or subregions thereof.

15. The device as recited in Claim 13 or 14, wherein the evaluation circuit (13) includes in memory the 3D pattern in the form of data (14) describing it, for example, in the form of a wire screen model (30).

16. The device as recited in Claim 15, wherein the pattern data (14) may be brought in externally.

17. The device as recited in Claim 15, wherein the pattern data (14) are derivable in an initialization step from 3D image data (15) of the unoccupied seat (1, 23) under predefined surrounding conditions and are storable.

18. The device as recited in one of Claims 13 through 17, wherein the evaluation circuit (13) includes a filter circuit for the temporal filtering of a plurality of evaluation results received subsequently in time to one another.